

5 **What is claimed is:**

- 10 1. A method to determine sperm activity comprising the steps of: (a) contacting an appropriate concentration of human zona pellucida protein 3 with an appropriate amount of sperm under conditions permitting the formation of a complex between the human zona pellucida protein 3 and the sperm; and (b) determining the complex form.
- 15 2. The method of claim 1, wherein the concentration of the human zona pellucida protein 3 is 0.01 nanograms per ml to 10,000 nanograms per ml.
- 20 3. The method of claim 1, wherein the concentration is 0.01 nanograms per ml to 5,000 nanograms per ml.
- 25 4. The method of claim 1, wherein the concentration is 0.01 nanograms per ml to 2,500 nanograms per ml.
- 30 5. The method of claim 1, wherein the concentration is 0.01 nanograms per ml to 1,000 nanograms per ml.
- 35 6. The method of claim 1, wherein the concentration is 0.01 nanograms per ml to 500 nanograms per ml.
7. The method of claim 1, wherein the concentration is 0.01 nanograms per ml to 100 nanograms per ml.

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